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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,009	03/26/2004	Clinton J. McAllister	7349-000006	2664
27572 7590 05/16/2007 HARNES, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER MERKLING, MATTHEW J	
			ART UNIT 1709	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/812,009

Applicant(s)

MCALLISTER ET AL.

Examiner

Matthew J. Merkling

Art Unit

1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 5 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On page 2, paragraph 8 and page 4, paragraph 11, the reference 10 is listed, but not shown in the drawings.

On page 3, paragraph 8, the reference 14A is listed, but not shown in the drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

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Reference number 156 in Figs. 2 and 2A is not contained in the description.

Reference number 150 in Fig. 2A is not contained in the description.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 recites the limitation "said muffler mounting flange" in line 1 and 2.

There is insufficient antecedent basis for this limitation in the claim.

5. Claim 7 recites the limitation "said second exhaust manifold" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Machida et al. (US 5,782,089).

Regarding claim 1, Machida discloses a catalytic converter assembly (Fig. 5) comprising;

catalytic conversion components (col. 3 lines 31-35, (1));

a one piece catalytic converter housing (2) with integral end cone (2a), said converter housing (2) including an opening (Fig. 5) for receiving the conversion components; and

a second end cone (5) which is welded to said catalytic converter housing such that a weld joint is formed between said housing and said second end cone (col. 3 lines 56-60).

8. Claims 1, 2, 4, 5, 7, 9, 14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (US 4,261,170).

Regarding claim 1, Suzuki discloses a catalytic converter assembly (Fig. 2) comprising;

catalytic conversion components (col. 2 lines 58-60, (6));

a one piece catalytic converter housing (converter casing, col. 2 line 41, (5), or Fig. 21 (214)) with integral end cone (see Figs. 2 and 21), said converter housing (5, 214) including an opening (meeting plane, (13, 236)) for receiving the conversion components; and

a second end cone (pipe, (3, 212)) which is welded to said catalytic converter housing such that a weld joint is formed between said housing and said second end cone (col. 8 lines 9-14).

Regarding claim 2, Suzuki further discloses the single piece catalytic converter housing (214) and integral end cone (See Fig. 21) are formed by casting (col. 4 lines 37-40).

Regarding claim 4, Suzuki further discloses the integral end cone includes a muffler mounting flange (col. 7 lines 38-40, (246)).

Regarding claim 5, Suzuki further illustrates said muffler mounting flange (246) is located along a free end (outlet, col. 7 line 36, (244)) of said integral end cone.

Regarding claim 7, Suzuki further discloses said second end cone integrally extends from an exhaust manifold (See Fig. 21), wherein said second end cone and said second exhaust manifold are cast as a single piece (col. 4 lines 37-40).

Regarding claim 9, Suzuki further discloses the catalytic converter comprises a mounting mat (elastic member, (152)) disposed adjacent an inner wall defining said opening (Fig. 21) and a filtering substrate (catalytic metal carried by a substrate, (216)) disposed within said mounting mat (col. 4 lines 49-57).

Regarding claim 10, Suzuki further discloses the catalytic converter assembly comprising a mantle (elastic ring member, Fig. 21, (166)) within the catalytic converter for receiving a filtering substrate (catalyst monolith, col. 4 line 64 – col. 5 line 1).

Regarding claim 14, Suzuki discloses a method of manufacturing a catalytic converter assembly comprising:

- a) providing catalytic conversion components (cylindrical casing, monolithic catalyst, etc. col. 2 lines 41-44);

- b) providing a one piece catalytic converter housing (Fig. 21, (214) and integral end cone (manifold, 212), said housing including an opening (upstream end 217, 236) for receiving said catalytic conversion components (col. 7 lines 25-57);

- c) disposing the catalytic converter components (216) within the opening of said catalytic converter housing (See Fig. 21);

- d) attaching a second end cone (212) portion to said catalytic converter housing to capture the catalytic converter within said catalytic converter assembly (See Fig. 21, col. 7 lines 18-24); and

- e) welding the second end cone to said one piece catalytic converter housing (214) and integral end cone (212) to form the catalytic converter assembly (col. 8 lines 9-14).

Regarding claim 16, Suzuki, as discussed in claim 14 above, further discloses an end cone (212) integrally extends from an exhaust manifold and the end cone and exhaust manifold are cast as a single piece (col. 8 lines 9-14).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) in view of Perrin et al. (US 6,508,981).

Regarding claim 3, Suzuki, as discussed in claim 2 above, discloses all of the claim limitations, but fails to teach the catalytic converter housing with integral end cone casting is formed from SiMo iron.

Perrin discloses metals that are useful in high temperature service such as exhaust manifolds and catalytic converters.

Perrin teaches SiMo irons in order to improve high temperature strength, resist thermal fatigue and improve high temperature oxidation resistance (col. 1 lines 44-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the SiMo alloy of Perrin in the catalytic converter housing with integral end cone casing of Suzuki to utilize the high temperature strength,

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resistance to thermal fatigue and improvement of high temperature oxidation resistance of SiMo.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) as applied to claim 1 above, and further in view of Brush et al. (US 2002/0150518).

Regarding claim 6, Suzuki, as discussed in claim 1 above, discloses all of the claim limitations, but fails to teach said weld joint provides a substantially air tight seal between said catalytic converter housing and a said second end cone.

Brush also discloses a catalytic converter assembly.

Brush teaches a fluid tight seal weld (76) around the catalytic converter housing (68) in order to prevent contaminated gas from exiting the catalytic converter unreacted and polluting the air (paragraph 1, 35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fluid tight seal weld, as in Brush, between the catalytic converter housing and end cone of Suzuki in order to prevent contaminated gas from exiting the catalytic converter unreacted and polluting the air.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) as applied to claim 1 above, and further in view of Nagami et al. (US 5,952,109).

Regarding claim 8, Suzuki, as discussed in claim 1 above, discloses all of the claim limitations including an annular flanges on the end cone and converter housing (col. 4 line 64 – col. 5 line 1) that are welded together (col. 8 lines 9-14), but fails to teach the annular flange having an inwardly angled portion and said second end cone includes a complimentary annular flange having an inwardly angled portion, whereby upon joining said second end cone to said converter housing an annular recess is provided to define said weld joint.

Nagami also discloses welding between two metal bodies.

Nagami teaches inwardly angled edges (Fig. 2, (2b, 3a) of two butting pieces of metal (2, 3) that are to be joined via welding as a preferable configuration in order to provide an edge combination for a butt welding between edges of metal bodies permitting a relatively wide range of allowance in accuracy of edge preparation (col. 2 lines 7-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the inward angled edges of two metal bodies of Nagami, to the annular flanges of Suzuki in order to provide an edge combination for a butt welding between edges of metal bodies permitting a relatively wide range of allowance in accuracy of edge preparation.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) as applied to claim 10 above, and further in view of Nilsson (WO 99/27240 A1).

Regarding claim 11, Suzuki, as discussed in claim 10 above, discloses all of the claim limitations, but fails to teach said mantle including an outwardly extending lip which is sandwiched between the catalytic converter housing and end cone.

Nilsson also discloses a catalytic converter for treatment of exhaust gasses from a combustion engine.

Nilsson teaches a mantle (Fig. 2, (14)) disposed within a catalytic converter housing (12) for receiving a filtering substrate (monolith, (13)) and the mantle including an outwardly extending lip (17) which is sandwiched between the catalytic converter housing (manifold, (12)) and end cone (10). Nilsson teaches this in order to hold the filtering substrate in place during operation (page 3 lines 4-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the mantle with the outward extending lip between the converter housing and the end cone, as in Nilsson, to the catalytic converter apparatus of Suzuki in order to hold the filtering substrate in place during operation.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) and Nilsson (WO 99/27240 A1) as applied to claim 11 above, and further in view of Brush et al. (US 2002/0150518).

Regarding claim 12, modified Suzuki, as discussed in claim 11 above, discloses all of the claim limitations, but fails to teach a weld joint occurring along a junction defined by the catalytic converter housing, end cone, and mantle.

Brush also discloses a catalytic converter assembly.

Brush teaches a single weld that incorporates a mantle (retainer ring, 44), end cone (78) and catalytic converter housing (shell, 70) in order for the welding to be easily implemented into production without increasing costs, labor, or impeding manufacturing efficiency and to ensure a fluid tight seal (paragraph 49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a single weld incorporating the mantle, end cone, and catalytic converter housing, as in Brush, in the catalytic converter apparatus of modified Suzuki in order to be easily implement the welding into production without increasing costs, labor, or impeding manufacturing efficiency and to ensure a fluid tight seal.

15. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170), Nilsson (WO 99/2727240) and Brush et al. (US 2002/0150518) as applied to claim 12 above, and further in view of Nagami et al. (US 5,952,109).

Regarding claim 13, modified Suzuki, as discussed in claim 12 above, discloses all of the claim limitations including an annular flanges on the end cone and converter housing (col. 4 line 64 – col. 5 line 1) that are welded together (col. 8 lines 9-14), but fails to teach the annular flange having an inwardly angled

portion and said second end cone includes a complimentary annular flange having an inwardly angled portion, whereby upon joining said second end cone to said converter housing an annular recess is provided to define said weld joint.

Nagami also discloses welding between two metal bodies.

Nagami teaches inwardly angled edges (Fig. 2, (2b, 3a) of two butting pieces of metal (2, 3) that are to be joined via welding as a preferable configuration in order to provide an edge combination for a butt welding between edges of metal bodies permitting a relatively wide range of allowance in accuracy of edge preparation (col. 2 lines 7-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the inward angled edges of two metal bodies of Nagami, to the annular flanges of modified Suzuki in order to provide an edge combination for a butt welding between edges of metal bodies permitting a relatively wide range of allowance in accuracy of edge preparation.

16. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 4,261,170) as applied to claim 14 above, and further in view of Brush et al. (US 2002/0150518).

Regarding claim 15, Suzuki, as discussed in claim 14 above, discloses all of the claim limitations, but fails to teach disposing said mantle including an outwardly extending lip disposed between said housing and said second end

cone prior to welding the second end cone to the one piece catalytic converter housing.

Brush also discloses a catalytic converter assembly.

Brush teaches a mantle (retainer ring, Fig. 10 (40)) disposed within a catalytic converter housing (68, 70) and receiving a filtering substrate (74), wherein the mantle has an outward extending lip (bridge, 46) between the catalytic converter housing (68, 70) and end cone (78) in order to provide a fluid tight seal around the catalytic converter housing (paragraph 35). Brush further teaches applying a single weld incorporating the mantle, end cone, and catalytic converter housing after these items are in place in order for the welding to be easily implemented into production without increasing costs, labor, or impeding manufacturing efficiency and to ensure a fluid tight seal (paragraph 49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the mantle and use a single weld incorporating the mantle, end cone, and catalytic converter housing, as in Brush, in the catalytic converter apparatus of modified Suzuki in order to be easily implement the welding into production without increasing costs, labor, or impeding manufacturing efficiency and to ensure a fluid tight seal.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is 571-

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272-9813. The examiner can normally be reached on Monday - Friday 8:30-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa D. Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJM

MJM

Alexa D. Neckel

ALEXA D. NECKEL
SUPERVISORY PATENT EXAMINER